Schedule 3: Supply and Delivery of Plant and Equipment			
	Name of STP : Anjanapura-2 under BDA Layout		
Item	**Description**	**Quantity**	**Total Price (including GST) INR**
Supply and Delivery of Plant and Equipment to Site for the following works:			
Mechanical, Electrical Works and Instrumentation ,Control & Automation Works			
3.1	**Process Plant (except Electrical, Instrumentation ,Control & Automation systems) To provide the following systems for**		
3.1.1	**TSPS**		
3.1.1.1	Inlet & Effluent chambers, Overflow chamber,Screen channels with necessary screening arrangements (Trash & Coarse screen), , Conveyors, Screening collection arrangement,Sluice gates, weir gates and Inlet & Overflow piping with fittings and Hardware with piping and all allied works complete	LS	
3.1.1.2	Wet well with superstructure & Pumping system Submersible pumps with suitable valves and piping arrangements and Hardware and all allied works complete	LS	
3.1.1.3	Material handling system with suitable Cranes and hoist arrangements with Hardware and all allied works complete	LS	
3.1.1.4	Miscellaneous works such as flushing arrangements,dewatering and ventilation system inculding Hardware all allied works complete	LS	
	STP		
3.1.1.5	Inlet chamber and Fine Screen Channel, Overflow chamber, Screen Effluent/ Grit Basin Distribution Channel with Sluice gates, weir gates,Stop logs, and Inlet & Overflow piping with fittings, flushing arrangement, inculding Hardware all allied works complete	LS	
3.1.1.6	Screen chamber with effluent channel drain piping and Fine screening, Conveyors, Screening collection arrangement, flushing arrangement,inculding Hardware all allied works complete	LS	
3.1.1.7	Vortex Grit mechanism with grit classifier & washing mechanism,Conveyors, Grit collection arrangement, sluice gates,Stop logs, flushing arrangement, inculding Hardware all allied works complete	LS	
3.1.1.8	SBR Basin with Aeration arrangement with piping, Sluice gates and weir gates,Stop logs, flushing arrangement, scum collection and pumping system, inculding Hardware all allied works complete	LS	
3.1.1.9	Not Used	LS	
3.1.1.10	Not Used	LS	
3.1.1.11	Not Used	LS	
3.1.1.12	Aeration Zone with RAS and SAS Pumpsets, Retrievable type Fine Bubble Diffuser Aeration system arrangement, Pipe grid, Drop legs,piping arrangements,Drain pumpsets, EOT, sluice gates, flushing arrangement,Handling Equipment,piping and valves inculding Hardware all allied works complete	LS	
3.1.1.13	Process Air Blower Building with blowers, Air Coolers,EOT Crane, Service water & blower cooler arrangement, Piping and valves, Handling Equipment,Ventilation system, Hardware and all allied works complete	LS	
3.1.1.14	Alum solution Preparation and dosing which includes minimum of prepartion and dosing pumpsets, agitators, mixing arrangement, flushing arrangement,Channel mounted mixer for alum mixing, Handling Equipment,Ventilation system, Hardware with piping and all allied works complete	LS	
3.1.1.15	Not Used	LS	
3.1.1.16	Not Used	LS	
3.1.1.20	Inlet & Outlet piping,Disc Filter Influent & Effluent chamber sluice gates,Weir gates, Stoplogs,Disc Filter units, Backwash water system and collection arrangement etc.	LS	

Schedule 3: Supply and Delivery of Plant and Equipment			
	Name of STP : Anjanapura-2 under BDA Layout		
Item	**Description**	**Quantity**	**Total Price (including GST) INR**
3.1.1.17	Material pumping station general arrangement,Pumpsets, Spill Containment Bund flushing arrangement,Material Handling Equipment,fire fighting system for complete STP (inclusive of fire alarm, fire detection, fire extinguishing system and integration with plan SCADA system for monitoring),Ventilation system,Hardware with piping, Valves and all allied works complete	LS	
3.1.1.19	Chlorine & any chemical dosing arrangement, flushing arrangement, Handling Equipment,Ventilation system,Hardware with piping and all allied works complete	LS	
3.1.1.18	Inlet & Outlet piping,Chlorine Contact Tank & Outfall structure with sluice gates,weir gates,Stop logs, mixing arrangement, hardware with piping, valves and all allied works complete	LS	
3.1.1.21	Sludge dewatering units- Submersible mixer arrangement, Sludge feed Pumpsets, flushing arrangement,Ventilation system,Handling Equipment and Hardware with piping, valves and all allied works complete	LS	
3.1.1.22	Polyelectrolyte dosing systems for thickners-Stirrer arrangement, feeding arrangement, Preparation & Storage tanks ,Dosing Pumpsets,flushing arrangement,Handling Equipment,Ventilation system, Hardware with piping and all allied works complete	LS	
3.1.1.23	Sludge dewatering units, sludge cake conveying system with cut gate arrangement and hopper & Collection system, Handling Equipment for dewatering units, flushing arrangement,Ventilation system, Hardware with piping and all allied works complete	LS	
3.1.1.24	Inlet & Outlet piping, Plant Drain Sump and Pump Station, Submersible pumpsets, Handling Equipment, Hardware with piping, Valves and all allied works complete	LS	
3.1.1.25	Inlet & Outlet piping, Treated water storage Pump Station, Submersible pumpsets, Handling Equipment, Hardware with piping, Valves and all allied works complete	LS	
3.1.1.26	Inlet & Outlet piping, Plant water Pump Station, Submersible pumpsets, Handling Equipment, Sluice gates, Weir gates, Stop log gates, Hardware with piping, Valves and all allied works complete	LS	
3.1.1.27	Flushing arrangement for all chemical & Sludge handling system, Dewatering Pumps including piping and all allied works in all sludge & Chemical handling pump houses complete	LS	
3.1.1.28	**The bidder shall list here details of any additional items (all areas of the works) required for a complete installation**		
3.1.1.29		LS	
3.1.1.30		LS	
3.1.1.31		LS	
3.1.1.32		LS	
	Sub Total of 3.1		**0.00**
3.2	**Electrical Systems**		
3.2.1	**Supply of of 11kV underground Cables, Termination Kits at following locations as per scope, specification and drawings.**		
3.2.1.1	11kV Outdoor cable termination at Tariff Metering Unit / BESCOM	LS	
3.2.1.2	11kV Indoor cable terminations at incomer and outgoings of 11kV Metal Enclosed Switchboard of Sewage Treatment Plant	LS	
3.2.1.3	11kV Outdoor cable terminations at primary side of 11kV / 0.433 kV Transformers of Sewage Treatment Plant	LS	
3.2.1.4	11kV XLPE Cable from Metering Unit to incomer of 11kV Metal Enclosed Switchboard of Sewage Treatment Plant	LS	
3.2.1.5	11kV XLPE Cables from 11kV Metal Enclosed Switchboard to Primary cable end boxes of 11kV/0.433kV Transformers of Sewage Treatment Plant	LS	
2.3.1.6	11kV XLPE Cable from existing Metering Unit to Proposed 11kV Metal Enclosed Switchboard if applicable	LS	
2.3.1.7	11kV XLPE Cable from Proposed 11kV Metal Enclosed Switchboard to 11kV Metal Enclosed Switchboard at Existing Sewage Treatment Plant if applicable	LS	
3.2.1.8	11kV Cable Straight through joints	LS	
3.2.2	**Supply of Electrical equipments at Sewage Treatment Plant Substation Building & Process Air Blower Building as per scope, specification and drawings.**		
3.2.2.1	11kV Metal Enclosed Switchboard	LS	

Schedule 3: Supply and Delivery of Plant and Equipment			
	Name of STP : Anjanapura-2 under BDA Layout		
Item	**Description**	**Quantity**	**Total Price (including GST) INR**
3.2.2.2	Diesel Generator Set complete with AMF Control Panel	LS	
3.2.2.3	11kV / 0.433kV Transformers	LS	
3.2.2.4	LT Non Segregated Aluminium Bus ducts with necessary supporting structure	LS	
3.2.2.5	415V Switchgear PCC	LS	
3.2.2.6	415V Capacitor banks with Automatic Power Factor Correction Relay	LS	
3.2.2.7	110V D.C Battery Bank, Battery Charger with D.C Distribution Board	LS	
3.2.3	**Supply of Motor Control Centers , Distribution boards etc of Motor Control Centres, Distribution boards etc at TSPS & Sewage Treatment plant with following major equipment, items as per scope, specification and drawings.**		
3.2.3.1	TSPS MCC	LS	
3.2.3.2	Process Air Blower MCC	LS	
3.2.3.3	Headworks MCC	LS	
3.2.3.4	Centrifuge MCC	LS	
3.2.3.5	RAS MCC	LS	
3.2.3.6	Chlorine MCC	LS	
3.2.3.7	Main Lighting DB	LS	
3.2.3.8	Variable Frequency Drives MCC	LS	
2.3.3.9	Local Control Panel / Local Push Button Stations	LS	
3.2.3.10	Miscellaneous works-Distribution Board	LS	
3.2.4	**Supply of Lighting System at TSPS & Sewage Treatment Plant with following major equipment, items as per scope, specification and drawings.**		
3.2.4.1	Lighting Fixtures	LS	
3.2.4.2	Lighting panels	LS	
3.2.4.3	Switchboards, Receptacles, Power Plug & Sockets, Switches, Ceiling fans with regulators etc	LS	
3.2.4.4	Point wiring with conduits, wires, supports etc for Lighting fixtures, Receptacles, Ceiling fans etc	LS	
3.2.4.5	Street Lighting and Area Lighting poles with Junction boxes and Over hang	LS	
3.2.5	**Supply of L.T Cabling System, HT/LT Cable Carrier System of L.T Cabling System, HT/LT Cable Carrier System at TSPS & Sewage Treatment Plant with following major components as per scope, specification and drawings.**		
3.2.5.1	L.T cables	LS	
3.2.5.2	L.T Cable termination with glands and lugs	LS	
3.2.5.3	Cable trays on supports for both LT and HT Cables	LS	
3.2.5.4	Hume Pipe	LS	
3.2.6	**Supply of Earthing & Lightning Protection System of Earthing & Lighting Protection System at TSPS & Sewage Treatment Plant with following major components as per scope, specification and drawings.**		
3.2.6.1	Earthing Conductor for outdoor main grid	LS	
3.2.6.2	Earthing Conductor for indoor main grid	LS	
3.2.6.3	Earthing Conductors for outdoor equipments and Junction Boxes	LS	
3.2.6.4	Lightning Protection system with Arrestors and Down Conductors	LS	
3.2.6.5	Earthing Conductor for indoor equipments	LS	
3.2.6.6	Treated Earth pits	LS	
3.2.7	**Complete Installation, testing and commissioning of safety procedures with Signage for Electrical Equipments at TSPS & Sewage Treatment Plant as per scope, specification and drawings.**		
3.2.8	**The bidder shall list here details of any additional items required for a complete installation**		
3.2.8.1		LS	
3.2.8.2		LS	
3.2.8.3		LS	
	Sub Total of 3.2		**0.00**

Schedule 3: Supply and Delivery of Plant and Equipment			
	Name of STP : Anjanapura-2 under BDA Layout		
Item	**Description**	**Quantity**	**Total Price (including GST) INR**
3.3	**Instrumentation, Control & Automation Systems**		
3.3.1	**Supply of the following Instrumentation Systems as per Technical Specifications.**		
3.3.1.1	Supplying of Ultrasonic open channel flow measurement with Transmitter's along with required accessaries and fittings for open channel flow measurement for the complete STP. The flow meter shall be Interfaced with PLC based scada control system .Refer clause 13.30 Minimum I/O Requirements for Auto mode Control operation of the Plant	LS	
3.3.1.2	Supplying of Air Flow Measuring System (Thermal mass flowmeter cum transmitter's at individual and common discharge of each air blowers's), Air pressure Measuring System with transmitter (at individual and common discharge of each air blowers's) & Temperature Measuring System with transmitter (at individual and common discharge of each air blowers's) along with the required accessories & fittings for the complete STP.Refer clause 13.30 Minimum I/O Requirements for Auto mode Control operation of the Plant	LS	
3.3.1.3	Supplying of Electromagnetic Flowmeter's with Indicating Transmitter's with totalizer (full bore type) with flange Ends, rates shall be inclusive of mating flanges with necessary fasteners and gaskets, for the complete STP. The flow meter shall be Interfaced with PLC based scada control system .Refer clause 13.30 Minimum I/O Requirements for Auto mode Control operation of the Plant	LS	
3.3.1.4	Supplying of Ultrasonic Level Transmitter's with indicators & alarms as required including all required Mounting accessories for the complete STP. and Interfacing with PLC based scada control system.Refer clause 13.30 Minimum I/O Requirements for Auto mode Control operation of the Plant.Refer clause 13.30 Minimum I/O Requirements for Auto mode Control operation of the Plant	LS	
3.3.1.5	Supplying of Differential Level Ultrasonic Sensor's & Transmitter's with indicators & alarms as required including all required Mounting accessories for the complete STP. and Interfacing with PLC based scada control system.Refer clause 13.30 Minimum I/O Requirements for Auto mode Control operation of the Plant	LS	
3.3.1.6	Supplying of Conductivity type Level Switches (back up to level transmitter), High Level & Low Level sensing -(with 4 point contact) with necessary instrumentation cabling,glands with suitable stub and flange and bolting arrangement for hook-up, for the complete STP and also Interfacing with PLC based scada control system .Refer clause 13.30 Minimum I/O Requirements for Auto mode Control operation of the Plant	LS	
3.3.1.7	Supplying of Float type Level Gauges with necessary instrumentation cabling,glands with suitable stub and flange and bolting arrangement for hook-up,for the complete STP and also Interfacing with PLC based scada control system.Refer clause 13.30 Minimum I/O Requirements for Auto mode Control operation of the Plant	LS	
3.3.1.8	Supplying of Pressure Transmitter's with necessary instrumentation cabling,manifold,glands and conduit with suitable stub and flange and bolting arrangement for hook-up, for the complete STP. and also Interfacing with PLC based scada control system .Refer clause 13.30 Minimum I/O Requirements for Auto mode Control operation of the Plant	LS	
3.3.1.9	Supplying of Pressure Switches on the pump discharge with necessary instrumentation cabling, glands and conduit with suitable stub and flange and bolting arrangement for hook-up, Pressure switch and also Interfacing with PLC based scada control system .Refer clause 13.30 Minimum I/O Requirements for Auto mode Control operation of the Plant	LS	
3.3.1.10	Supplying of glycerine filled stainless steel pressure gauges of 150 mm Dia. Dail suitable on top of Air vessel with nipple, snubber for vibration resistance and necessary length of SS tubing suitable for mounting , including isolating valve for maintenance etc.,complete with all lead and lifts etc, for the complete STP	LS	
3.3.1.11	Supplying of Field instruments IP-65 enclosures for complete field instrumentation	LS	
3.3.1.12	Supplying of Field Junction boxes	LS	
3.3.1.13	Supplying of Surge protection Devices for all the instruments	LS	
3.3.1.14	Supply of on-line UPS system for complete ICA equipment inclusive of wireless communication equipment,CCTV systems,field instrumentation ,control and Automation system with 120 mins backup on full load.	LS	
3.3.1.15	Supplying of 24V DC power supply system with SMF batteries & battery charger with DC distribution board with all accessories complete	LS	

Schedule 3: Supply and Delivery of Plant and Equipment			
	Name of STP : Anjanapura-2 under BDA Layout		
Item	**Description**	**Quantity**	**Total Price (including GST) INR**
3.3.1.16	Supplying of Air conditioning system for control room with all accessories complete as required under specifications	LS	
3.3.1.17	Supplying of Temperature-Measuring System with required Accessories & fittings	LS	
3.3.1.18	Instrumentation Earthing system for complete STP	LS	
3.3.1.19	Suppliying of Weight Indicator cum Transmitter with required accessaries & fittings	LS	
3.3.1.20	Supplying of sludge blanket level transmitters for the complete STP including all required Mounting accessories. and Interfacing with PLC based scada control system.	LS	
3.3.2	**Supply of Online Analytical Instruments as per Technical Specifications.**		
3.3.2.1	Dissolved Oxygen Analyzer + Accessories + fittings	LS	
3.3.2.2	ORP Analyzer's+ Accessories + fittings	LS	
3.3.2.3	p H Analyzer+ Accessories + fittings	LS	
3.3.2.4	Conductivity Analzyer+ Accessories + fittings	LS	
3.3.2.5	Residual Chlorine Analyzer+ Accessories +fittings	LS	
3.3.2.6	MLSS Analyzer-+ Accessories+ Fittings	LS	
3.3.3	**Supply of Online Real Time Multi Parameters Continuous Monitoring System for Influent and Treated Sewage Parameters & AutoSamplers**		
3.3.3.1	All weather refrigerated Auto sampler's as per specifications	LS	
3.3.3.2	Real time Multi Parameters Continuous Monitoring System for Influent and Treated Sewage Parameters at Inlet & outlet of STP to measure the following parameters (BOD,COD,TSS,COLOR,p H, Ammonical Nitrogen,Dissolved Oxygen & Temperature) and communication modules to transmit the data to SCADA system,CPCB and KSPCB data centers as and when required.	LS	
3.3.4	**Supply of the Instrumentation Cables/cable trays as per Technical Specification**		
3.3.4.1	Suppying of Instrumentation & Control Cables and Power Cables, OFC, Glands & Lugs, cable conduits ,etc as required to complete the entire Instrumentation,control and automation system ,required as per specifications	LS	
3.3.4.2	Supplying and installation of hot dip GI perforated cable tray's with cover along with required angle supports, with coupler plates, Anchor bolts and nuts etc complete and the tray should be fitted on the wall / ceiling etc. complete for all instrumentation cables	LS	
3.3.5	Any other item & accessories not specified above but required to complete the work as per bid specifications. Note: 1. Contractor shall list down all equipment with breakup of item, quantity and include the total price of these items. 2. Items not listed and required for completing the job shall be done by contractor without any additional payment.	LS	
3.3.6	**Control & Automation System**		
3.3.6.1	Supplying of redundant PLC (Hot standby PLC system), I/O Modules (critical inputs shall be on dual I/O's) ,redundant managed ethernet switches,RIO 's with 16"color touch screen HMI, Redundant power supply , Spares as indicated in the specifications,etc..with all required accessories ,required hardware & software complete with licensing,any other hardware & software to meet the requirements as per specifications	LS	
3.3.6.2	Supplying of PLC &16" HMI programming software for all PLC and HMI equipment	LS	
3.3.6.3	Supplying of redundant SCADA server software(SCADA is on dual redundant server)	LS	
3.3.6.4	Supplying of Historian software	LS	
3.3.6.5	Supplying of SCADA Server stations with 32" LED monitor sysytem, loaded with latest authorised windows server operating system, latest MS Office professional , licensed latest & proven PLC programming software ,licensed SCADA software,centralized server monitored Anti virus software,required licensed network monitoring software,licensed firewall software,etc... with all accessories complete to meet the requirements as per specifications	LS	
3.3.6.6	Supplying of SCADA operator stations,engineering stations,Historian Stations & CCTV stations with with 32" LED monitor systems, loaded with latest authorised windows operating system, latest MS Office professional ,licensed SCADA software,licensed client Anti virus software,required licensed network monitoring software,etc.. all accessories complete to meet the requirements as per specifications	LS	

Schedule 3: Supply and Delivery of Plant and Equipment			
	Name of STP : Anjanapura-2 under BDA Layout		
Item	**Description**	**Quantity**	**Total Price (including GST) INR**
3.3.6.7	Supplying of multifunction Printers-A3 size servers with all accessories complete and networked with SCADA system	LS	
3.3.6.8	Supplying of Industrial Laptop 16" screen loaded with authorised windows operating system,MS Office,and PLC & HMI programming software,SCADA software with all accessories complete	LS	
3.3.6.9	Supplying of LED screens, 55" in array of 2x3 (total 6 monitors) networked with SCADA & CCTV servers to display the SCADA screens, CCTV feeds, with all accessories complete in real time.	LS	
3.3.6.10	Supplying of SCADA System industrial consoles for housing the complete SCADA system with all accessories complete as per specifications	LS	
3.3.7	**Communication Interface Equipment**		
3.3.7.1	Interoperability test in co-ordination with CP-024 & MIS-2 SCADA Contract @ Shimsha Bhavan to achieve complete data integration between sewerage contracts and centralized SCADA centers to meet the requirements as per specifications	LS	
3.3.7.2	Supplying of redundant GPRS Communication modules with redundant SIM cards,redundant power supply units with all required accessories to communicate & receive data from ISPS,CP-024 & MIS-2 SCADA Contract @ Shimsha Bhavan for bulk data transfer for monitoring and control.	LS	
3.3.8	**Monitoring Requirements**		
3.3.8.1	Supplying of CCTV IR water proof cameras suitable for upto 100ft.with IR Dome camera, 360 degrees view,control key board, DVR, Hard Disk, cables, UPT transreceivers ,complete with all required accessories,software and hardware required,CCTV server station loaded with CCTV software with latest windows OS with minimum 1 TB hard drive,licensed anti virus,etc,32"LED monitors connected via LAN to SCADA servers,mounting poles,fixtures,etc.. (Close Circuit Television System to be installed to cover all areas of the facilities,inclusive of high speed internet bandwidth as required to monitor the CCTV feed remotely and via web based broswers.CCTV feeds shall be monitored from SCADA control room)	LS	
3.3.8.2	Supplying of Management Information Software (MIS) inclusive of online document management system,seperate dashboard for each work site,implementation,Annual licensing subscription for entire duration of the contract period,five number of user licenses,cloud storage,daily support with 99.99% SLA agreement,24x7 help desk,fully secured hosting cloud server shall be based in India and shall be reputed with SLA agreement for 99.99 availability,security of data with data encryption and certification,allied softwares, Implementation & Maintenance of MIS Software throughtout the duration of the contract period inclusive of daily updation and complete integration with main MIS software as required per specifications.	LS	
3.3.8.3	Any other item & accessories not specified above but required to complete the work. Note: 1. Contractor shall list down all equipment with breakup of item, quantity and include the total price of these items. 2. Items not listed and required for completing the job shall be done by contractor without any additional payment.	LS	
3.3.9	**The Bidder shall list here details of any additional items required for a complete installation**		
3.3.9.1		LS	
3.3.9.2		LS	
3.3.9.3		LS	
	Sub Total of 3.3		**0.00**
3.4	**General Mechanical Systems**		
3.4.1	Building Services including domestic water systems The bidder shall list here details of any additional items required for a complete installation	LS	
3.4.2		LS	
3.4.3		LS	
	Sub Total of 3.4		**0.00**

Schedule 3: Supply and Delivery of Plant and Equipment			
	Name of STP : Anjanapura-2 under BDA Layout		
Item	**Description**	**Quantity**	**Total Price (including GST) INR**
Total of Schedule 3 (Sub Total 3.1+Sub Total 3.2+Sub Total 3.3+Sub Total 3.4) Carried to Schedule 7 - Grand Summary			
	Note:All quantities in lumpsum		
	Signature of Bidder		
	Name & Designation		
	Company		